

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/565,126
Source: IFWP
Date Processed by STIC: 1/27/06

ENTERED



IFWP

RAW SEQUENCE LISTING

DATE: 01/27/2006

PATENT APPLICATION: US/10/565,126

TIME: 09:59:46

Input Set : A:\002441.00187 sequence listing.TXT

Output Set: N:\CRF4\01272006\J565126.raw

4 <110> APPLICANT: Chiron Corporation
6 <120> TITLE OF INVENTION: Immunogenic Compositions for Streptococcus
pyogenes
8 <130> FILE REFERENCE: PP020663.0004 (002441.00187)
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/565,126
C--> 11 <141> CURRENT FILING DATE: 2006-01-19
13 <150> PRIOR APPLICATION NUMBER: US 60/491822
14 <151> PRIOR FILING DATE: 2003-07-31
16 <150> PRIOR APPLICATION NUMBER: US 60/541565
17 <151> PRIOR FILING DATE: 2004-02-03
19 <160> NUMBER OF SEQ ID NOS: 135
21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 873
25 <212> TYPE: PRT
26 <213> ORGANISM: Streptococcus pyogenes
28 <400> SEQUENCE: 1
29 Met Asp Leu Glu Gln Thr Lys Pro Asn Gln Val Lys Gln Lys Ile Ala
30 1 5 10 15
31 Leu Thr Ser Thr Ile Ala Leu Leu Ser Ala Ser Val Gly Val Ser His
32 20 25 30
33 Gln Val Lys Ala Asp Asp Arg Ala Ser Gly Glu Thr Lys Ala Ser Asn
34 35 40 45
35 Thr His Asp Asp Ser Leu Pro Lys Pro Glu Thr Ile Gln Glu Ala Lys
36 50 55 60
37 Ala Thr Ile Asp Ala Val Glu Lys Thr Leu Ser Gln Gln Lys Ala Glu
38 65 70 75 80
39 Leu Thr Glu Leu Ala Thr Ala Leu Thr Lys Thr Thr Ala Glu Ile Asn
40 85 90 95
41 His Leu Lys Glu Gln Gln Asp Asn Glu Gln Lys Ala Leu Thr Ser Ala
42 100 105 110
43 Gln Glu Ile Tyr Thr Asn Thr Leu Ala Ser Ser Glu Glu Thr Leu Leu
44 115 120 125
45 Ala Gln Gly Ala Glu His Gln Arg Glu Leu Thr Ala Thr Glu Thr Glu
46 130 135 140
47 Leu His Asn Ala Gln Ala Asp Gln His Ser Lys Glu Thr Ala Leu Ser
48 145 150 155 160
49 Glu Gln Lys Ala Ser Ile Ser Ala Glu Thr Thr Arg Ala Gln Asp Leu
50 165 170 175
51 Val Glu Gln Val Lys Thr Ser Glu Gln Asn Ile Ala Lys Leu Asn Ala
52 180 185 190
53 Met Ile Ser Asn Pro Asp Ala Ile Thr Lys Ala Ala Gln Thr Ala Asn
54 195 200 205
55 Asp Asn Thr Lys Ala Leu Ser Ser Glu Leu Glu Lys Ala Lys Ala Asp

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56      210      215      220
57 Leu Glu Asn Gln Lys Ala Lys Val Lys Lys Gln Leu Thr Glu Glu Leu
58 225      230      235      240
59 Ala Ala Gln Lys Ala Ala Leu Ala Glu Lys Glu Ala Glu Leu Ser Arg
60      245      250      255
61 Leu Lys Ser Ser Ala Pro Ser Thr Gln Asp Ser Ile Val Gly Asn Asn
62      260      265      270
63 Thr Met Lys Ala Pro Gln Gly Tyr Pro Leu Glu Glu Leu Lys Lys Leu
64      275      280      285
65 Glu Ala Ser Gly Tyr Ile Gly Ser Ala Ser Tyr Asn Asn Tyr Tyr Lys
66      290      295      300
67 Glu His Ala Asp Gln Ile Ile Ala Lys Ala Ser Pro Gly Asn Gln Leu
68 305      310      315      320
69 Asn Gln Tyr Gln Asp Ile Pro Ala Asp Arg Asn Arg Phe Val Asp Pro
70      325      330      335
71 Asp Asn Leu Thr Pro Glu Val Gln Asn Glu Leu Ala Gln Phe Ala Ala
72      340      345      350
73 His Met Ile Asn Ser Val Arg Arg Gln Leu Gly Leu Pro Pro Val Thr
74      355      360      365
75 Val Thr Ala Gly Ser Gln Glu Phe Ala Arg Leu Leu Ser Thr Ser Tyr
76      370      375      380
77 Lys Lys Thr His Gly Asn Thr Arg Pro Ser Phe Val Tyr Gly Gln Pro
78 385      390      395      400
79 Gly Val Ser Gly His Tyr Gly Val Gly Pro His Asp Lys Thr Ile Ile
80      405      410      415
81 Glu Asp Ser Ala Gly Ala Ser Gly Leu Ile Arg Asn Asp Asp Asn Met
82      420      425      430
83 Tyr Glu Asn Ile Gly Ala Phe Asn Asp Val His Thr Val Asn Gly Ile
84      435      440      445
85 Lys Arg Gly Ile Tyr Asp Ser Ile Lys Tyr Met Leu Phe Thr Asp His
86      450      455      460
87 Leu His Gly Asn Thr Tyr Gly His Ala Ile Asn Phe Leu Arg Val Asp
88 465      470      475      480
89 Lys His Asn Pro Asn Ala Pro Val Tyr Leu Gly Phe Ser Thr Ser Asn
90      485      490      495
91 Val Gly Ser Leu Asn Glu His Phe Val Met Phe Pro Glu Ser Asn Ile
92      500      505      510
93 Ala Asn His Gln Arg Phe Asn Lys Thr Pro Ile Lys Ala Val Gly Ser
94      515      520      525
95 Thr Lys Asp Tyr Ala Gln Arg Val Gly Thr Val Ser Asp Thr Ile Ala
96      530      535      540
97 Ala Ile Lys Gly Lys Val Ser Ser Leu Glu Asn Arg Leu Ser Ala Ile
98 545      550      555      560
99 His Gln Glu Ala Asp Ile Met Ala Ala Gln Ala Lys Val Ser Gln Leu
100      565      570      575
101 Gln Gly Lys Leu Ala Ser Thr Leu Lys Gln Ser Asp Ser Leu Asn Leu
102      580      585      590
103 Gln Val Arg Gln Leu Asn Asp Thr Lys Gly Ser Leu Arg Thr Glu Leu
104      595      600      605

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```

105 Leu Ala Ala Lys Ala Lys Gln Ala Gln Leu Glu Ala Thr Arg Asp Gln
106      610                      615                      620
107 Ser Leu Ala Lys Leu Ala Ser Leu Lys Ala Ala Leu His Gln Thr Glu
108 625                      630                      635                      640
109 Ala Leu Ala Glu Gln Ala Ala Ala Arg Val Thr Ala Leu Val Ala Lys
110                      645                      650                      655
111 Lys Ala His Leu Gln Tyr Leu Arg Asp Phe Lys Leu Asn Pro Asn Arg
112                      660                      665                      670
113 Leu Gln Val Ile Arg Glu Arg Ile Asp Asn Thr Lys Gln Asp Leu Ala
114                      675                      680                      685
115 Lys Thr Thr Ser Ser Leu Leu Asn Ala Gln Glu Ala Leu Ala Ala Leu
116      690                      695                      700
117 Gln Ala Lys Gln Ser Ser Leu Glu Ala Thr Ile Ala Thr Thr Glu His
118 705                      710                      715                      720
119 Gln Leu Thr Leu Leu Lys Thr Leu Ala Asn Glu Lys Glu Tyr Arg His
120                      725                      730                      735
121 Leu Asp Glu Asp Ile Ala Thr Val Pro Asp Leu Gln Val Ala Pro Pro
122                      740                      745                      750
123 Leu Thr Gly Val Lys Pro Leu Ser Tyr Ser Lys Ile Asp Thr Thr Pro
124                      755                      760                      765
125 Leu Val Gln Glu Met Val Lys Glu Thr Lys Gln Leu Leu Glu Ala Ser
126      770                      775                      780
127 Ala Arg Leu Ala Ala Glu Asn Thr Ser Leu Val Ala Glu Ala Leu Val
128 785                      790                      795                      800
129 Gly Gln Thr Ser Glu Met Val Ala Ser Asn Ala Ile Val Ser Lys Ile
130                      805                      810                      815
131 Thr Ser Ser Ile Thr Gln Pro Ser Ser Lys Thr Ser Tyr Gly Ser Gly
132                      820                      825                      830
133 Ser Ser Thr Thr Ser Asn Leu Ile Ser Asp Val Asp Glu Ser Thr Gln
134                      835                      840                      845
135 Arg Ala Leu Lys Ala Gly Val Val Met Leu Ala Ala Val Gly Leu Thr
136      850                      855                      860
137 Gly Phe Arg Phe Arg Lys Glu Ser Lys
138 865                      870
140 <210> SEQ ID NO: 2.
141 <211> LENGTH: 2648
142 <212> TYPE: PRT
143 <213> ORGANISM: Streptococcus pyogenes
144 <400> SEQUENCE: 2
146 Ala Thr Gly Gly Ala Cys Thr Thr Ala Gly Ala Ala Cys Ala Ala Ala
147 1                      5                      10                      15
148 Cys Gly Ala Ala Gly Cys Cys Ala Ala Ala Cys Cys Ala Ala Gly Thr
149                      20                      25                      30
150 Thr Ala Ala Gly Cys Ala Gly Ala Ala Ala Ala Thr Thr Gly Cys Thr
151                      35                      40                      45
152 Thr Thr Ala Ala Cys Cys Thr Cys Ala Ala Cys Ala Ala Thr Thr Gly
153      50                      55                      60
154 Cys Thr Thr Thr Ala Thr Thr Gly Ala Gly Thr Gly Cys Cys Ala Gly
155 65                      70                      75                      80

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```

156 Thr Gly Thr Ala Gly Gly Cys Gly Thr Ala Thr Cys Thr Cys Ala Cys
157      85      90      95
158 Cys Ala Ala Gly Thr Cys Ala Ala Ala Gly Cys Ala Gly Ala Thr Gly
159      100      105      110
160 Ala Thr Ala Gly Ala Gly Cys Cys Thr Cys Ala Gly Gly Ala Gly Ala
161      115      120      125
162 Ala Ala Cys Gly Ala Ala Gly Gly Cys Gly Ala Gly Thr Ala Ala Thr
163      130      135      140
164 Ala Cys Thr Cys Ala Cys Gly Ala Cys Gly Ala Thr Ala Gly Thr Thr
165 145      150      155      160
166 Thr Ala Cys Cys Ala Ala Ala Ala Cys Cys Ala Gly Ala Ala Ala Cys
167      165      170      175
168 Ala Ala Thr Thr Cys Ala Ala Gly Ala Gly Gly Cys Ala Ala Ala Gly
169      180      185      190
170 Gly Cys Ala Ala Cys Thr Ala Thr Thr Gly Ala Thr Gly Cys Ala Gly
171      195      200      205
172 Thr Thr Gly Ala Ala Ala Ala Ala Cys Thr Cys Thr Cys Ala Gly
173      210      215      220
174 Thr Cys Ala Ala Cys Ala Ala Ala Ala Ala Gly Cys Ala Gly Ala Ala
175 225      230      235      240
176 Cys Thr Gly Ala Cys Ala Gly Ala Gly Cys Thr Thr Gly Cys Thr Ala
177      245      250      255
178 Cys Cys Gly Cys Thr Cys Thr Gly Ala Cys Ala Ala Ala Ala Ala Cys
179      260      265      270
180 Thr Ala Cys Thr Gly Cys Thr Gly Ala Ala Ala Thr Cys Ala Ala Cys
181      275      280      285
182 Cys Ala Cys Thr Thr Ala Ala Ala Ala Gly Ala Gly Cys Ala Gly Cys
183      290      295      300
184 Ala Ala Gly Ala Thr Ala Ala Thr Gly Ala Ala Cys Ala Ala Ala Ala
185 305      310      315      320
186 Ala Gly Cys Thr Thr Thr Ala Ala Cys Cys Thr Cys Thr Gly Cys Ala
187      325      330      335
188 Cys Ala Ala Gly Ala Ala Ala Thr Thr Ala Cys Ala Cys Thr Ala
189      340      345      350
190 Ala Thr Ala Cys Thr Cys Thr Thr Gly Cys Ala Ala Gly Thr Ala Gly
191      355      360      365
192 Thr Gly Ala Gly Gly Ala Gly Ala Cys Gly Cys Thr Ala Thr Thr Ala
193      370      375      380
194 Gly Cys Cys Cys Ala Ala Gly Gly Ala Gly Cys Cys Gly Ala Ala Cys
195 385      390      395      400
196 Ala Thr Cys Ala Ala Ala Gly Ala Gly Ala Gly Thr Thr Ala Ala Cys
197      405      410      415
198 Ala Gly Cys Thr Ala Cys Thr Gly Ala Ala Ala Cys Ala Gly Ala Gly
199      420      425      430
200 Cys Thr Thr Cys Ala Thr Ala Ala Thr Gly Cys Thr Cys Ala Ala Gly
201      435      440      445
202 Cys Ala Gly Ala Thr Cys Ala Ala Cys Ala Thr Thr Cys Ala Ala Ala
203      450      455      460
204 Ala Gly Ala Gly Ala Cys Thr Gly Cys Ala Thr Thr Gly Thr Cys Ala

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205 465          470          475          480
206 Gly Ala Ala Cys Ala Ala Ala Ala Ala Gly Cys Thr Ala Gly Cys Ala
207          485          490          495
208 Thr Thr Thr Cys Ala Gly Cys Ala Gly Ala Ala Ala Cys Thr Ala Cys
209          500          505          510
210 Thr Cys Gly Ala Gly Cys Thr Cys Ala Ala Gly Ala Thr Thr Thr Ala
211          515          520          525
212 Gly Thr Gly Gly Ala Ala Cys Ala Ala Gly Thr Cys Ala Ala Ala Ala
213          530          535          540
214 Cys Gly Thr Cys Thr Gly Ala Ala Cys Ala Ala Ala Ala Thr Ala Thr
215 545          550          555          560
216 Thr Gly Cys Thr Ala Ala Gly Cys Thr Cys Ala Ala Thr Gly Cys Thr
217          565          570          575
218 Ala Thr Gly Ala Thr Thr Ala Gly Cys Ala Ala Thr Cys Cys Thr Gly
219          580          585          590
220 Ala Thr Gly Cys Thr Ala Thr Cys Ala Cys Thr Ala Ala Ala Gly Cys
221          595          600          605
222 Ala Gly Cys Thr Cys Ala Ala Cys Gly Gly Cys Thr Ala Ala Thr
223          610          615          620
224 Gly Ala Thr Ala Ala Thr Ala Cys Ala Ala Ala Ala Gly Cys Ala Thr
225 625          630          635          640
226 Thr Ala Ala Gly Cys Thr Cys Ala Gly Ala Ala Thr Thr Gly Gly Ala
227          645          650          655
228 Gly Ala Ala Gly Gly Cys Thr Ala Ala Ala Gly Cys Thr Gly Ala Cys
229          660          665          670
230 Thr Thr Ala Gly Ala Ala Ala Ala Thr Cys Ala Ala Ala Ala Ala Gly
231          675          680          685
232 Cys Thr Ala Ala Ala Gly Thr Thr Ala Ala Ala Ala Ala Gly Cys Ala
233          690          695          700
234 Ala Thr Thr Gly Ala Cys Thr Gly Ala Ala Gly Ala Gly Thr Thr Gly
235 705          710          715          720
236 Gly Cys Ala Gly Cys Thr Cys Ala Gly Ala Ala Ala Gly Cys Thr Gly
237          725          730          735
238 Cys Thr Cys Thr Ala Gly Cys Ala Gly Ala Ala Ala Ala Ala Gly Ala
239          740          745          750
240 Gly Gly Cys Ala Gly Ala Ala Cys Thr Thr Ala Gly Thr Cys Gly Thr
241          755          760          765
242 Cys Thr Thr Ala Ala Ala Thr Cys Cys Thr Cys Ala Gly Cys Thr Cys
243          770          775          780
244 Cys Gly Thr Cys Thr Ala Cys Thr Cys Ala Ala Gly Ala Thr Ala Gly
245 785          790          795          800
246 Cys Ala Thr Thr Gly Thr Gly Gly Gly Thr Ala Ala Thr Ala Ala Thr
247          805          810          815
248 Ala Cys Cys Ala Thr Gly Ala Ala Ala Gly Cys Ala Cys Cys Gly Cys
249          820          825          830
250 Ala Ala Gly Gly Cys Thr Ala Thr Cys Cys Thr Cys Thr Thr Gly Ala
251          835          840          845
252 Ala Gly Ala Ala Cys Thr Thr Ala Ala Ala Ala Ala Ala Thr Thr Ala
253          850          855          860

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VERIFICATION SUMMARY

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Output Set: N:\CRF4\01272006\J565126.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date